

## ABSTRACT OF THE DISCLOSURE

A method and a system for processing a semiconductor device intended to improve the overlay accuracy of a semiconductor device product, particularly in its device area, in carrying out the mix-and-match exposure process are designed to calculate the difference of exposure distortions between two layers in the device area and the difference of exposure distortions between the two layers at the overlay measurement mark position from data of exposure field distortions of two exposure tools used for the mix-and-match exposure process and data of device area and overlay measurement mark position of the product, calculate a modification value which relates both differences to each other, calculate a first exposure condition correction value from the measurement result of overlay, and carry out the exposure process based on a second exposure condition correction value which is evaluated by modifying the first exposure condition correction value with the modification value.